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## POLICY AND PROCEDURE DIRECTIVE

TO: ALL MANUAL HOLDERS	PPD NO. 96-11
SUBJECT:  SAMPLING, TESTING, AND ACCEPTANCE OF EMULSIFIED BITUMINOUS MATERIALS	EFFECTIVE DATE:  March 1, 1996

### GENERAL

This Policy and Procedure Directive supersedes P.P.D. No. 92-4.

This policy and procedure directive outlines the procedures to be followed for sampling, testing, and acceptance of emulsified asphalts and emulsified recycling agents. It establishes procedures to be used in the approval and shipment of all emulsions used on State highway projects.

This Policy and Procedure Directive modifies the normal certification procedures. It shall be used in conjunction with the requirements of Subsection 106.05 of the Specifications.

Metric (SI) units and values are given in this Policy and Procedure Directive with English units and values following in parentheses. Values given for metric and English units may be numerically equivalent (soft converted) for the associated units, or they may be given as rounded or rationalized values (hard converted). Either the metric or English units along with their corresponding values shall be used in accordance with applicable specifications.

### PROCEDURES

Emulsions may be accepted for use on a State project using either of two acceptance procedures. The first procedure involves testing and preapproval of individual tanks or batches of undiluted emulsion by ADOT. The second procedure involves acceptance on the basis of Certificate of Analysis for individual tanks or batches of undiluted emulsion by an approved testing laboratory. Both procedures include certain specified responsibilities and conditions that must be fulfilled by the supplier and ADOT personnel. Out-of-State suppliers shall conform to the provisions of this policy and procedure directive unless otherwise directed by the Materials Engineer.

SAMPLING, TESTING, AND ACCEPTANCE  
OF EMULSIFIED BITUMINOUS MATERIALS

<u>Supplier Location</u>	<u>Responsible ADOT Lab</u>
Phoenix Area	Central Laboratory
Tucson Area	Tucson Regional Laboratory
Flagstaff Area	Flagstaff Regional Laboratory
Fredonia Area	Flagstaff Regional Laboratory
Out-of-state	Central Laboratory

I. ACCEPTANCE THROUGH PREAPPROVAL

This is the most commonly used procedure for acceptance of emulsions. The supplier elects to have their tanks or batches of material preapproved by the responsible ADOT lab prior to shipment. Tank or batch samples shall be taken by the supplier and witnessed by State personnel. Sampling shall conform to the requirements of AASHTO T 40. If an emulsion is not used promptly, it shall be resampled at 30 day intervals.

(a) ADOT Testing Laboratory Responsibilities

- (1) The responsible ADOT lab shall sample and test emulsions from suppliers.
- (2) When the responsible ADOT lab receives a request for sampling and testing of an emulsion it shall respond in a timely manner. In general, testing of an emulsion shall be completed within 24 hours of receipt of a sample.
- (3) After testing is completed, the supplier will be notified as to the acceptance or rejection of the emulsion. If the material is approved for use it shall be assigned an ADOT lab test number and the tank or batch number, quantity of material approved, and expiration date for this material shall be recorded.
- (4) If an emulsion fails, the supplier may elect to have the material resampled and retested by ADOT personnel. If the material fails on retesting, it will not be tested further until the manufacturer submits test reports from a laboratory approved by the Materials Engineer which indicate the material is acceptable.
- (5) The responsible ADOT testing laboratory will keep all necessary documentation in their offices on approved and disapproved tanks or batches of emulsion. They shall also keep copies of all Certificates of Compliance and maintain an accounting of the quantities of material shipped for each approved lab test number. Upon request from project personnel, the responsible lab will forward copies of test results of all materials incorporated on a State project.

(b) Supplier's Responsibilities

(1) Upon notification of the approval of a tank or batch of emulsion and an assigned lab test number, the supplier shall submit to the responsible lab a Certificate of Compliance (a blank sample is shown in attachment #1) for the approved material which contains the following information:

- a) Supplier's name and address.
- b) Material type.
- c) Tank or batch number.
- d) Total quantity certified in tank or batch [liters (gallons)].
- e) Date certificate expires.
- f) Statement that the material complies in all respects with the specific requirements of the cited specifications.
- g) Responsible ADOT lab and the assigned ADOT lab test number.
- h) Name, title, and signature/date of person(s) having legal authority to bind supplier of material.
- i) This Certificate of Compliance shall be submitted to the responsible lab in a timely manner. If a certificate is not on file with the responsible lab, the Department may elect to disapprove the use of said material on a State project.

(2) All shipments of emulsions made to the project shall be accompanied by two copies of the Certificate of Compliance. In addition to the requirements listed above, these certificates shall include the following information:

- a) ADOT project number.
- b) Name of general (prime) contractor.
- c) Quantity of material in shipment [liters (gallons)].
- d) Total quantity of material shipped from the certified tank or batch [liters (gallons)].

(c) ADOT Project Personnel Responsibilities

(1) Upon delivery of an emulsion to a State project, the ADOT inspector shall receive the two copies of Certificate of Compliance and inspect them for accuracy and completeness.

(2) The project shall call the responsible ADOT lab and receive verification of the lab test number and acceptability of material before use. The project may also request copies of test results from the responsible ADOT lab at this time.

(3) One copy of the Certificate of Compliance shall be forwarded to the responsible ADOT Lab. This copy must be forwarded in a timely manner.

(4) Sampling on the project shall consist of a set of two 2 liter (half-gallon) plastic containers per delivery unit. Samples shall be taken by the contractor and witnessed by State personnel. One sample shall be tested for percent residue by either the project or Regional Lab. The remaining sample shall be held at the project for backup testing. If the emulsion has been diluted, the project should indicate the rate of dilution on the sample ticket.

## II. ACCEPTANCE THROUGH CERTIFICATE OF ANALYSIS

An alternative procedure for acceptance of emulsions is through a Certificate of Analysis. With the approval of the Materials Group, the supplier may elect to sample and test their own material and submit a Certificate of Analysis to the project. The Materials Group's approval of this acceptance method is contingent upon the supplier fulfilling certain requirements as specified below. The Materials Group reserves the right to revoke its approval should the supplier fail to comply with these requirements.

### (a) Supplier's Responsibilities

(1) The supplier or its designated lab must be fully equipped and qualified to test emulsions for all specified properties. The testing laboratory must meet the requirements of the "ADOT System for the Evaluation of Testing Laboratories" for the testing of emulsified asphalts.

(2) The supplier must submit a written quality control and inventory control plan for approval to the Materials Group which outlines the procedure the supplier will follow to ensure that acceptable material is produced and supplied to the Department.

(3) All tanks or batches of material used on State projects shall be fully tested by the supplier's designated testing lab and meet all properties specified for the material. The maximum amount of material which may be certified under any single Certificate of Analysis shall be 190 kiloliters (50,000 gallons). The material may not be used after 30 days from the date of test completion unless it has been retested and recertified.

(4) Upon completion of testing of a tank or batch of emulsion, the supplier shall submit to the responsible ADOT lab a Certificate of Analysis (a blank sample is shown in attachment #2) for the material which contains the following information:



- a) Supplier's name and address.
- b) Material type.
- c) Tank or batch number.
- d) Total quantity certified in tank or batch [liters (gallons)].
- e) Date certificate expires.
- f) Statement that the material complies in all respects with the specific requirements of the cited specifications.
- g) All required test information.
- h) Name, title and signature/date of person(s) having legal authority to bind supplier of material.
- i) This Certificate of Analysis shall be submitted to the responsible lab in a timely manner.

(5) All shipments of an emulsion made to the project shall be accompanied by two copies of the Certificate of Analysis. In addition to the requirements listed above, these certificates shall include the following information:

- a) ADOT project number.
- b) Name of general (prime) contractor.
- c) Quantity of material in shipment [liters (gallons)].
- d) Total quantity of material shipped from the certified tank or batch [liters (gallons)].

(b) ADOT Project Personnel Responsibilities

(1) Upon delivery of an emulsion to a State project, the ADOT inspector shall receive the two copies of the Certificate of Analysis and inspect them for accuracy and completeness.

(2) The project shall call the responsible ADOT lab and receive verification that the supplier has been approved to use the "Certificate of Analysis Acceptance Program".

(3) One copy of the Certificate of Analysis shall be forwarded to the responsible ADOT Lab. This copy must be forwarded in a timely manner.

(4) Sampling on the project shall consist of a set of three 2 liter (half-gallon) plastic containers per delivery unit. Samples shall be taken by the contractor and witnessed by State personnel. If the emulsion is diluted, the project shall indicate the rate of dilution on the sample ticket. One sample shall be sent to the project or Regional Lab for determination of percent residue. One sample shall be sent to the responsible ADOT lab for quality assurance testing. The remaining sample shall be held at the project lab for backup testing.

(c) ADOT Testing Lab Responsibilities

(1) The responsible ADOT lab shall test the quality assurance sample on a random basis. A minimum of 20% of all samples received will be tested for compliance to specifications.

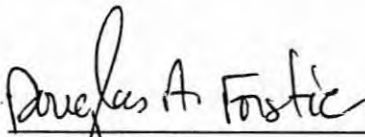
(2) Should conditions warrant, the responsible lab may test undiluted samples from the supplier's tank or batch in lieu of samples from the project.

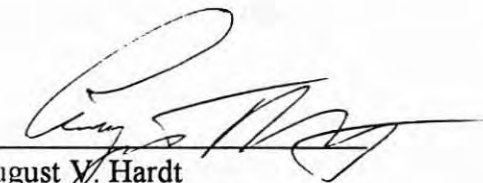
(3) The supplier, Materials Group Central Lab, and Regional Lab will be notified of out-of-specification test results or any significant variation from the supplier's test results on the same material. The intent of the quality assurance testing is to verify that the supplier's quality control program is adequate to ensure that the specified material is provided, not to determine the acceptability of the material. The material is accepted by the Department on basis of the Certificate of Analysis. Should the responsible ADOT lab question the validity of the supplier's quality control program through quality assurance testing or reports from project offices of substandard material, the matter shall be referred to the Materials Engineer for his/her determination.

(4) The responsible ADOT lab will keep all necessary documentation in their offices on quality assurance testing of emulsions. They shall also keep copies of all Certificates of Analysis and maintain an accounting of the quantity of each shipment for comparison to the amount of emulsion certified.

SUMMARY

This Policy and Procedure Directive outlines the procedures to be followed for sampling, testing, and acceptance of emulsified bituminous materials. The important thing to remember is that no emulsion shall be used until either a copy of the Certificate of Compliance with an approved lab test number, or a Certificate of Analysis is furnished. The initial certificate will be on file at the responsible ADOT lab. If any questions arise concerning these procedures, contact the Materials Engineer.

  
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Douglas A. Forstie  
Assistant State Engineer  
Materials Group

Approved by:   
\_\_\_\_\_  
August V. Hardt  
Deputy State Engineer  
Highway Operations Group

March 1, 1996

P.P.D. No. 96-11 (Attachment #1)

CERTIFICATE OF COMPLIANCE

PROJECT #: \_\_\_\_\_ CONTRACTOR: \_\_\_\_\_

SUPPLIER NAME AND ADDRESS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

MATERIAL: \_\_\_\_\_ TANK OR BATCH NUMBER: \_\_\_\_\_

TOTAL QUANTITY CERTIFIED IN THIS TANK OR BATCH: \_\_\_\_\_ liters/gallons

DATE CERTIFICATE EXPIRES: \_\_\_\_\_

QUANTITY IN THIS SHIPMENT: \_\_\_\_\_ liters/gallons

TOTAL QUANTITY SHIPPED TO DATE  
FROM CERTIFIED TANK OR BATCH: \_\_\_\_\_ liters/gallons

I certify that the material indicated above conforms to all applicable requirements of Section 1005 of the Arizona Department of Transportation Standard Specifications, including requirements in the contract special provisions, and is from stock that has been sampled and approved by the responsible Arizona Department of Transportation laboratory ( \_\_\_\_\_ ) under Laboratory Test Number ( \_\_\_\_\_ ).

\_\_\_\_\_  
Signature and Date

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

March 1, 1996

P.P.D. No. 96-11 (Attachment #2)

CERTIFICATE OF ANALYSIS

PROJECT #: \_\_\_\_\_ CONTRACTOR: \_\_\_\_\_

SUPPLIER NAME AND ADDRESS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

MATERIAL: \_\_\_\_\_ TANK OR BATCH NUMBER: \_\_\_\_\_

TOTAL QUANTITY CERTIFIED IN THIS TANK OR BATCH: \_\_\_\_\_ liters/gallons

DATE CERTIFICATE EXPIRES: \_\_\_\_\_

QUANTITY IN THIS SHIPMENT: \_\_\_\_\_ liters/gallons

TOTAL QUANTITY SHIPPED TO DATE  
FROM CERTIFIED TANK OR BATCH: \_\_\_\_\_ liters/gallons

I certify that the material indicated above conforms to all applicable requirements of Section 1005 of the Arizona Standard Specifications, including requirements in the contract special provisions, as represented by the attached test results.

\_\_\_\_\_  
Signature and Date

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title